

Amendment to the Claims:

1. (Previously Presented) A cooling device for cooling a superconducting coil assembly in an MR apparatus, comprising:

a cooling chamber adapted to contain a cooling agent which is in thermal contact with the superconducting coil assembly,

5 a refrigerator for cooling the cooling agent, and

a cooling agent storage in fluid connection with the cooling chamber, the cooling agent storage being adapted to take up cooling agent from the cooling chamber when at least a part of the cooling agent in the cooling chamber exceeds a first predetermined temperature, and to return cooling agent to the cooling chamber

10 when at least a part of the cooling agent in the cooling chamber remains below or is equal to a second predetermined temperature, the cooling agent storage including a pressure tank in fluid connection with the cooling chamber for taking up the compressed cooling agent and a compressor means interposed in a fluid connection between the cooling chamber and the pressure tank in order to compress the cooling
15 agent exiting the cooling chamber.

2. (Original) A cooling device according to claim 1, wherein the cooling chamber is adapted to contain a cooling agent in a liquid and a gaseous condition and the fluid connection is connected to a part of the cooling chamber which is adapted to contain a gaseous cooling agent.

3. (Original) A cooling device according to claim 1, wherein the refrigerator has a cooling power sufficient to compensate heat transfer to the cooling chamber in regular condition so as to allow zero boil-off operation.

4. (Original) A cooling device according to claim 1, comprising means for controlling the take up and return of the cooling agent by means of a signal derived from the pressure of the cooling agent in the cooling chamber.

5 5. (Previously Presented) A cooling device according to claim 1, wherein the refrigerator comprises a cooling surface in thermal contact with the cooling agent, the cooling surface extending into the cooling chamber, in particular into that part of the cooling chamber which is adapted to contain a gaseous cooling agent.

6. (Original) A cooling device according to claim 1, wherein the cooling agent storage includes a gasometer for storing the cooling agent at a constant predetermined pressure.

7. (Previously Presented) A cooling device according to claim 1, wherein the cooling agent storage comprises a pressure reduction means interposed in a fluid connection between the cooling chamber and the pressure tank in order to reduce the pressure of the cooling agent returning to the cooling chamber.

8. (Original) A cooling device according to claim 1, wherein the cooling agent storage is adapted to contain the cooling agent in a gaseous condition.

9. (Original) A cooling device according to claim 1, wherein the cooling chamber and the cooling agent storage are adapted to contain helium as a cooling agent.

10. (Cancelled)

5 11. (Currently Amended) A cooling method according to claim ~~[[10]]~~ 12, wherein the cooling agent is in a gaseous and a liquid condition in the cooling chamber and the transfer and return of the cooling agent in the gaseous condition is controlled by means of a signal derived from the pressure of the cooling agent inside the cooling chamber, and the cooling agent is transferred from the cooling chamber to the cooling agent storage when a first predetermined pressure is exceeded in the cooling chamber, and the cooling agent is returned from the cooling agent storage to

the cooling chamber when the pressure of the cooling agent in the cooling chamber is equal to or less than a second predetermined pressure.

12. (Currently Amended) A cooling method ~~according to claim 10 for~~
cooling a superconducting coil assembly in an MR apparatus, wherein the
superconducting coil assembly is cooled using a cooling agent which is in thermal
contact with the superconducting coil assembly in a cooling chamber, the cooling
5 agent being cooled by a refrigerator, the method comprising the steps of:
transferring cooling agent from the cooling chamber to a cooling agent storage
when a predetermined temperature is exceeded in at least a part of the cooling agent
in the cooling chamber, and
returning cooling agent from the cooling agent storage to the cooling chamber
10 when the temperature of at least a part of the cooling agent in the cooling chamber is
equal to or less than the predetermined temperature, wherein the transferred cooling
agent is compressed so as to be stored in a compressed state outside the cooling
chamber and decompressed so as to be returned to the cooling chamber.

13. (Cancelled)

14. (Currently Amended) An MR apparatus ~~according to claim 13,~~
~~wherein the cooling agent storage comprises~~ comprising:
a superconducting magnet having a superconducting coil assembly; and
a cooling device for cooling said superconducting coil assembly, the cooling
5 device comprising:
a cooling chamber adapted to contain a cooling agent which is in
thermal contact with the superconducting coil assembly,
a refrigerator for cooling the cooling agent,
a pressure tank in fluid connection with the cooling chamber for taking
10 up the compressed cooling agent and returning cooling agent to the cooling
chamber in accordance with temperature in the cooling chamber, and

a compressor interposed in a fluid connection between the cooling chamber and the pressure tank in order to compress the cooling agent exiting the cooling chamber.

15. (Currently Amended) An MR apparatus according to claim 14, ~~wherein the cooling agent storage comprises~~ further including a pressure reducer interposed in a fluid connection between the cooling chamber and the pressure tank in order to reduce the pressure of the cooling agent returning to the cooling chamber.